

NPN SILICON POWER TRANSISTORS RADIATION RESISTANT

10 AMPERES

FEATURES

HIGH POWER
 RADIATION EXPOSURE LEVEL TO 5×10^{14} nvt
 TOTAL NEUTRON FLUX GREATER THAN 10 KEV

APPLICATIONS

POWER AMPLIFIER
 RADIATION ENVIRONMENTS
 ULTRA HIGH FREQUENCY



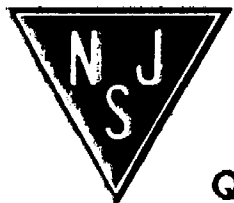
TO-18

*All leads isolated from case

ABSOLUTE MAXIMUM RATINGS

		2N5529 2N5530*	2N5533 2N5534*
V _{CB0}	COLLECTOR-BASE VOLTAGE	60 V	90 V
V _{CEO}	COLLECTOR-EMITTER VOLTAGE	40 V	75 V
V _{EB0}	EMITTER-BASE VOLTAGE	3 V	3 V
I _C	CONTINUOUS COLLECTOR CURRENT	10 A	10 A
I _B	CONTINUOUS BASE CURRENT	4 A	4 A
T _J	OPERATING JUNCTION TEMPERATURE	-65°C to +200°C	
T _{stg}	STORAGE TEMPERATURE	-65°C to +200°C	
R _{θJC}	THERMAL RESISTANCE, JUNCTION TO CASE	5°C/W	
P _D	POWER DISSIPATION (25°C)	35 W	

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2N5529 2N5530 2N5533 2N5534

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

CHARACTERISTICS	SYMBOL	MIN.	MAX.	UNITS
COLLECTOR-EMITTER SUSTAINING VOLTAGE ⁽¹⁾ ($I_C = 50\text{ mA}$) 2N5529, 2N5530 2N5533, 2N5534 ($I_C = 50\text{ mA}$, NOTE 2) 2N5529, 2N5530 2N5533, 2N5534	$V_{CE(sus)}$	40 75 40 75		V V V V
COLLECTOR-CUTOFF CURRENT ($V_{CE} = 30\text{V}$, $V_{BE} = 0$, $T_C = 100^\circ\text{C}$)	I_{CEX}		1.0	mA
COLLECTOR-CUTOFF CURRENT ($V_{CB} = \text{RATED}$) ($V_{CB} = \text{RATED}$, NOTE 2)	I_{CBO}		1.0 1.0	mA mA
COLLECTOR-CUTOFF CURRENT ($V_{CB} = 30\text{V}$) ($V_{CB} = 30\text{V}$, NOTE 2)	I_{CBO}		0.1 1.0	mA mA
COLLECTOR-CUTOFF CURRENT ($V_{CE} = \text{RATED}$)	I_{CEO}		50	mA
EMITTER CUTOFF CURRENT ($V_{EB} = 3.0\text{V}$) ($V_{EB} = 3.0\text{V}$, NOTE 2)	I_{EBO}		1.0 1.0	mA mA
EMITTER FLOATING POTENTIAL ($V_{CB} = \text{RATED}$, $I_E = 0$)	V_{EBF}		1.0	V
DC CURRENT GAIN ⁽¹⁾ ($V_{CE} 5.0\text{V}$, $I_C = 0.5\text{A}$) 2N5529, 2N5530 ($V_{CE} 5.0\text{V}$, $I_C = 0.5\text{A}$) 2N5533, 2N5534 ($V_{CE} 5.0\text{V}$, $I_C = 3.0\text{A}$) 2N5529, 2N5530 ($V_{CE} 5.0\text{V}$, $I_C = 3.0\text{A}$) 2N5533, 2N5534 ($V_{CE} 5.0\text{V}$, $I_C = 5.0\text{A}$) 2N5529, 2N5530 ($V_{CE} 5.0\text{V}$, $I_C = 5.0\text{A}$) 2N5533, 2N5534 ($V_{CE} 2.0\text{V}$, $I_C = 10\text{A}$) 2.5 ($V_{CE} 5.0\text{V}$, $I_C = 3.0\text{A}$ NOTE 2) 2N5529, 2N5530 ($V_{CE} 5.0\text{V}$, $I_C = 3.0\text{A}$ NOTE 2) 2N5533, 2N5534 7.0	h_{FE}	40 25 40 30 25 20 2.5 15 7.0	300 300 200 150	
COLLECTOR-EMITTER SATURATION VOLTAGE ⁽¹⁾ ($I_C = 3.0\text{A}$, $I_B = 0.3\text{A}$) 2N5529, 2N5530 ($I_C = 0.5\text{A}$, $I_B = 4.0\text{A}$) 2N5533, 2N5534 ($I_C = 10\text{A}$, $I_B = 4.0\text{A}$) 2.0 ($I_C = 3.0\text{A}$, $I_B = 0.3\text{A}$, NOTE 2) 2N5529, 2N5530 ($I_C = 3.0\text{A}$, $I_B = 0.5\text{A}$, NOTE 2) 2N5533, 2N5534 3.0	$V_{CE(sat)}$		1.25 1.25 2.0 2.0 3.0	V V V V V
BASE-EMITTER SATURATION VOLTAGE ⁽¹⁾ ($I_C = 3.0\text{A}$, $I_B = 0.3\text{A}$) 2N5529, 2N5530 ($I_C = 3.0\text{A}$, $I_B = 0.5\text{A}$) 2N5533, 2N5534	$V_{BE(sat)}$		1.5 1.5	V V
BASE-EMITTER VOLTAGE ($V_{CE} = 5.0\text{V}$, $I_C = 3.0\text{A}$) ($V_{CE} = 5.0\text{V}$, $I_C = 5.0\text{A}$)	V_{BE}		1.5 3.0	V V
MAGNITUDE OF SMALL SIGNAL GAIN ($V_{CE} = 28\text{V}$, $I_C = 0.5\text{A}$, $f = 25\text{ MHz}$)	$ h_{fe} $	8.0		
SMALL SIGNAL GAIN ($V_{CE} = 5.0\text{V}$, $I_C = 3.0\text{A}$, $f = 1.0\text{ KHz}$) 2N5529, 2N5530 2N5533, 2N5534	h_{fe}	20 15		
OUTPUT CAPACITANCE ($V_{CB} = 30\text{V}$, $f = 1.0\text{ MHz}$)	C_{obo}		75	pF